IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Before the Board of Appeals and Interferences

In re the Application of

Inventors: Akihiko NISHIO et al.

Appln No.: 10/528,120

Filed: March 16, 2005

For: METHOD FOR CONTROLLING TRANSMIT POWER AND BASE STATION APPARATUS

APPEAL BRIEF

On Appeal From Group Art Unit 2618
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TABLE OF AUTHORITIES

I. REAL PARTY IN INTEREST

The real party in interest is the Assignee of the present application, Matsushita Electric Industrial Co., Ltd., of Osaka, Japan.

II. RELATED APPEALS AND INTERFERENCES

There are no prior or pending appeals, interferences, or judicial proceedings known to Appellants, Appellants' legal representative, or the Assignee that may be related to, directly affect or be directly affected by, or have a bearing on the Board's decision in the pending appeal.

III. STATUS OF CLAIMS

Claims 1-11 have been presented for examination. Claim 1 has been canceled, and claims 2-11 remain pending. Claims 2-11 stand finally rejected and form the subject matter of the present appeal.

IV. STATUS OF AMENDMENTS

No claim amendments were filed after the Final Rejection of May 21, 2007.

V. SUMMARY OF CLAIMED SUBJECT MATTER

An object of the claimed invention is to control the transmit power of a common channel for a wireless multimedia broadcast/multicast service (MBMS) so as to: (1) prevent the transmit power from becoming excessive and interfering with other communication channels and (2) increase communication capacity (see specification page 4, lines 11-15, and page 19, lines 16-19).

To achieve this or other objects of the invention, independent claim 2 defines a transmit power control (TPC) method for concurrently controlling the transmit power of a downlink common channel S-CCPCH, used to simultaneously transmit the same data to a plurality of mobile stations, and the transmit powers of downlink dedicated channels DPCH assigned individually to the mobile stations (see Figs. 7, 10, 12, and 15 and page 19, lines 11-16). Each of the mobile stations transmits a first TPC command for the downlink common channel S-CCPCH and a second TPC command for the downlink dedicated channel DPCH to a base station through an uplink dedicated channel DPCH (see Figs. 4-6 and page 17, lines 13-16). The base station controls the transmit power of the downlink common channel S-CCPCH based on the first TPC commands and controls the transmit powers of the downlink dedicated channels DPCH based on the second TPC commands (see page 18, line 2, through page 19, line 10). For each mobile station, a transmission interval of the first

TPC command is longer than a transmission interval of the second TPC command (see Figs. 4 and 6, page 15, line 26, through page 16, line 7, and page 17, lines 2-12).

Independent claim 3 defines a TPC method for concurrently controlling the transmit power of a downlink common channel S-CCPCH, used to simultaneously transmit the same data to a plurality of mobile stations, and the transmit powers of downlink dedicated channels DPCH assigned individually to the mobile stations (see Figs. 7, 10, 12, and 15 and page 19, lines 11-16). Each of the mobile stations transmits a first TPC command for the downlink common channel S-CCPCH and a second TPC command for the downlink dedicated channel DPCH to a base station through an uplink dedicated channel DPCH (see Figs. 4-6 and page 17, lines 13-16). The base station controls the transmit power of the downlink common channel S-CCPCH based on the first TPC commands and controls the transmit powers of the downlink dedicated channels DPCH based on the second TPC commands (see page 18, line 2, through page 19, line 10). In one frame, the number of times the first TPC command is transmitted is smaller than the number of times the second TPC command is transmitted for each mobile station (see Fig. 4 and page 16, lines 7-11).

Independent claim 4 defines a TPC method for concurrently controlling the transmit power of a downlink common channel S-

CCPCH, used to simultaneously transmit the same data to a plurality of mobile stations, and the transmit powers of downlink dedicated channels DPCH assigned individually to the mobile stations (see Figs. 7, 10, 12, and 15 and page 19, lines 11-16). Each of the mobile stations transmits a first TPC command for the downlink common channel S-CCPCH and a second TPC command for the downlink dedicated channel DPCH to a base station through an uplink dedicated channel DPCH (see Figs. 4-6 and page 17, lines 13-16). The base station controls the transmit power of the downlink common channel S-CCPCH based on the first TPC commands and controls the transmit powers of the downlink dedicated channels DPCH based on the second TPC commands (see page 18, line 2, through page 19, line 10). Both the first TPC command and the second TPC command are transmitted in a same time slot TS for each mobile station (see Fig. 5 and page 16, lines 15-20).

Independent claim 5 defines a TPC method for concurrently controlling the transmit power of a downlink common channel S-CCPCH, used to simultaneously transmit the same data to a plurality of mobile stations, and the transmit powers of downlink dedicated channels DPCH assigned individually to the mobile stations (see Figs. 7, 10, 12, and 15 and page 19, lines 11-16). Each of the mobile stations transmits a first TPC command for the downlink common channel S-CCPCH and a second TPC command for the downlink

dedicated channel DPCH to a base station through an uplink dedicated channel DPCH (see Figs. 4-6 and page 17, lines 13-16). The base station controls the transmit power of the downlink common channel S-CCPCH based on the first TPC commands and controls the transmit powers of the downlink dedicated channels DPCH based on the second TPC commands (see page 18, line 2, through page 19, line 10). The base station increases a transmit power of the downlink common channel S-CCPCH when at least one of the first TPC commands transmitted from the mobile stations is a TPC command instructing an increase of the transmit power and decreases the transmit power of the downlink common channel S-CCPCH when all of the first TPC commands transmitted from the mobile stations are TPC commands instructing a decrease of the transmit power (see page 18, lines 17-27).

Independent claim 6 defines a TPC method for concurrently controlling the transmit power of a downlink common channel S-CCPCH, used to simultaneously transmit the same data to a plurality of mobile stations, and the transmit powers of downlink dedicated channels DPCH assigned individually to the mobile stations (see Figs. 7, 10, 12, and 15 and page 19, lines 11-16). Each of the mobile stations transmits a TPC command for its respective downlink dedicated channel DPCH to a base station through an uplink dedicated channel DPCH (see Figs. 4-6 and page 17, lines 13-16).

The base station controls the transmit powers of the downlink dedicated channels DPCH based on the TPC commands and controls the transmit power of the downlink common channel S-CCPCH at a transmit power equal to the maximum transmit power of the downlink dedicated channels DPCH after transmit power control or at the maximum transmit power with an addition of an offset (see Fig. 10, page 19, lines 22-25, and page 21, line 9, through page 22, line 1).

Dependent claim 7 further limits the subject matter of base claim 6 by reciting that each of the mobile stations transmits an ACK signal or a NACK signal for the downlink common channel S-CCPCH to the base station through the uplink dedicated channel DPCH or an uplink random access channel PRACH (see Fig. 12 and page 25, lines 2-8). The base station decreases the offset when the ACK signal is received a plurality of times consecutively and increases the offset when the NACK signal is received a plurality of times consecutively (see page 26, lines 2-17).

Independent claim 8 defines a TPC method for concurrently controlling the transmit power of a downlink common channel S-CCPCH, used to simultaneously transmit the same data to a plurality of mobile stations, and the transmit powers of downlink dedicated channels DPCH assigned individually to the mobile stations (see Figs. 7, 10, 12, and 15 and page 19, lines 11-16). Each of the mobile stations transmits a TPC command for its respective downlink

dedicated channel DPCH and a signal indicating an amount of increase of a transmit power of the downlink common channel S-CCPCH to a base station through an uplink dedicated channel DPCH or an uplink random access channel PRACH (see Fig. 15 and page 28, lines 1-9). The base station controls the transmit powers of the downlink dedicated channels DPCH based on the TPC commands and increases the transmit power of the downlink common channel S-CCPCH by the indicated amount of increase of the transmit power (see page 27, lines 4-5, and page 29, lines 2-28).

Independent claim 9 defines a base station apparatus that performs transmit power control of a downlink common channel S-CCPCH, used to simultaneously transmit the same data to a plurality of mobile stations, and downlink dedicated channels DPCH assigned individually to the mobile stations (see Figs. 3, 9, 13, and 16 and page 19, lines 11-16). A reception section 400-1, ..., 400-K of the base station apparatus receives a first TPC command for the downlink common channel S-CCPCH and a second TPC command for a downlink dedicated channel DPCH through an uplink dedicated channel DPCH from each of the mobile stations (see page 12, lines 4-22). A first control section 540 controls the transmit power of the downlink common channel S-CCPCH based on the first TPC commands (see page 14, lines 2-18). A second control section 640 controls transmit powers of the downlink dedicated channels DPCH based on

the second TPC commands (see page 15, lines 4-9). The first control section 540 increases the transmit power of the downlink common channel S-CCPCH when at least one of the first TPC commands transmitted from the mobile stations is a TPC command instructing an increase of the transmit power and decreases the transmit power of the downlink common channel S-CCPCH when all of the first TPC commands transmitted from the mobile stations are TPC commands instructing a decrease of the transmit power (see Fig. 3 and page 14, lines 8-14).

Independent claim 10 defines a base station apparatus that performs transmit power control of a downlink common channel S-CCPCH, used to simultaneously transmit the same data to a plurality of mobile stations, and downlink dedicated channels DPCH assigned individually to the mobile stations (see Figs. 3, 9, 13, and 16 and page 19, lines 11-16). A reception section 400-1, …, 400-K of the base station apparatus receives a TPC command for the downlink dedicated channel DPCH through an uplink dedicated channel DPCH from each of the mobile stations (see Fig. 9 and page 12, lines 4-22). A first control section 640 controls the transmit powers of the downlink dedicated channels DPCH based on the TPC commands (see page 20, line 28, through page 21, line 7). A second control section 540 controls a transmit power of the downlink common channel S-CCPCH at a transmit power equal to the maximum transmit

power of the downlink dedicated channels after transmit power control or at the maximum transmit power with an addition of an offset (see page 21, line 16, through page 22, line 11).

Independent claim 11 defines a base station apparatus that performs transmit power control of a downlink common channel S-CCPCH, used to simultaneously transmit the same data to a plurality of mobile stations, and downlink dedicated channels DPCH assigned individually to the mobile stations (see Figs. 3, 9, 13, and 16 and page 19, lines 11-16). A reception section 400-1, ..., 400-K of the base station apparatus receives a TPC command for a downlink dedicated channel DPCH and a signal indicating an amount of increase of the transmit power of a downlink common channel S-CCPCH through an uplink dedicated channel DPCH from each of the mobile stations (see Fig. 16, page 12, lines 4-22, and page 28, lines 16-18). A first control section 640 controls the transmit powers of the downlink dedicated channels DPCH based on the TPC commands (see page 20, line 28, through page 21, line 7). A second control section 540 increases the transmit power of the downlink common channel S-CCPCH by the indicated amount of increase of the transmit power (see page 29, lines 2-26).

The references above to the specification and drawings are for illustrative purposes only and should not be deemed to limit the scope of the invention to the referenced embodiments.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

(1) Whether claims 4-6 and 8-11 stand correctly rejected, under 35 USC §102(b), as being anticipated by Voyer (US 2001/0027112);

(2) Whether claims 1 and 3 stand correctly rejected, under 35 USC §103(a), as being unpatentable over Voyer (US 2001/0027112) in view of Nakano et al. (US 5,933,782; and

(3) Whether claim 7 stands correctly rejected, under 35 USC §103(a), as being unpatentable over Voyer (US 2001/0027112) in view of Kumar et al. (US 6,434,367).

VII. ARGUMENT

A. Anticipation Rejections of Claims 4-6 and 8-11

It is well-settled that a claim is anticipated only if each and every element set forth in the claim is described, either expressly or inherently, in a prior art reference. See *MPEP §2131, first sentence of bolded subheading; and Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).* The identical invention must be shown in as complete

detail as is contained in the claim. See *MPEP §2131, sixth sentence of bolded subheading;* and *Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).*

For the reasons set forth below, the Appellants submit that the Final Rejection does not support a conclusion that Voyer identically discloses the subject matter defined by claims 4-6 and 8-11.

1. Anticipation Rejection of Claim 4

Claim 4 defines a transmit power control (TPC) method for concurrently controlling the transmit powers of: (1) a downlink common channel based on received first TPC commands and (2) downlink dedicated channels based on received second TPC commands. Both the first and second TPC commands are transmitted in the same time slot by each of a plurality of mobile stations.

The Final Rejection proposes that Voyer discloses, in paragraph 0002, mobile stations that transmit first and second TPC commands within the same time slot (see Final Rejection page 5, lines 1-3).

By contrast to the Final Rejection's proposal, however, Voyer discloses that a composite signal transmitted by a base station comprises all of the dedicated signals (i.e., dedicated channels) and specific signals (i.e., common channels) for the base station's

coverage area (see Voyer paragraph [0002], lines 1-6). Each of the dedicated channels is communicated to a respective mobile station and the common channels are communicated to all mobile stations within the base station's coverage area (see paragraph [0002], lines 4-6).

Voyer does not disclose in the cited paragraph that the mobile stations transmit any information, contrary to the Final Rejection's proposal; thus, it necessarily follows that Voyer cannot disclose, in the cited material, the claimed feature of mobiles stations that each transmit first and second TPC commands. Although Voyer discloses in other sections of the specification that the mobile stations each communicate a power command signal TPC to a base station, Voyer does not disclose, for the reasons identified in section VII(A)(4) below, that a mobile station communicates two power command signals within an uplink channel that each regulate a different downlink channel.

Further, although Voyer's base station may multiplex both dedicated channels and common channels into a composite transmission signal using code division multiple access (CDMA) multiplexing (see Voyer paragraph [0002], lines 7-10), such CDMA multiplexing requires each channel to be coded by a different spread code. Since each spread code creates a distinct coded channel within the multiplexed composite signal, it necessarily

follows that Voyer's dedicated and common channels are not transmitted in the same time slot of a single channel, as are the first and second TPC commands recited in claim 4. Moreover, Voyer's dedicated and common channels are not identical, or even similar to, the claimed first and second TPC commands.

Accordingly, the Appellants submit that Voyer does not identically disclose the subject matter defined by claim 11. Specifically, Voyer does not disclose the claimed features of: (1) a plurality of mobile stations that each communicate first and second TPC commands in the same time slot and (2) a base station that controls the transmit power of a downlink common channel based on the received first TPC commands and controls the transmit powers of downlink dedicated channels based on the received second TPC commands.

Therefore, Voyer does not anticipate the subject matter defined by claim 4, and reversal of the rejection of claim 4 is warranted.

2. Anticipation Rejection of Claim 5

Claim 5 defines a transmit power control (TPC) method for controlling the transmit power of a downlink common channel based on first TPC commands received from a plurality of mobile stations. According to this method, a base station decreases the transmit power of the downlink common channel when all of the received first TPC commands instruct a decrease of the transmit power.

The Final Rejection proposes that Voyer discloses, in the abstract and paragraphs 0004 and 0007, decreasing the transmit power of a downlink common channel when the TPC commands received from every mobile station instruct a decrease of the transmit power for this channel (see Final Rejection page 6, lines 4-9).

An inspection of Voyer's abstract and paragraph 0007 unambiguously contravenes the Final Rejection's assertion that these portions of Voyer's disclosure describe the features for which they are cited. With respect to Voyer's paragraph 0004, Voyer discloses a plurality of power control units 14_1-14_N that each receive a respective one of TPC command signals TPC_1-TPC_N communicated by a corresponding mobile station SM_1-SM_N (see Voyer Fig. 1 and paragraph [0004], lines 8-11). Each power control unit 14_1-14_N modifies its corresponding input signal e_1-e_N based on the corresponding received TPC command signal TPC_1-TPC_N (see paragraph [0004], lines 11-14).

More specifically, Voyer discloses that power control unit 14_1 modifies input signal e_1 based on received TPC command signal TPC_1, power control unit 14_2 modifies input signal e_2 based on received TPC command signal TPC_2, power control unit 14_3 modifies input signal e_3 based on received TPC command signal TPC_3, …, and power control unit 14_N modifies input signal e_N based on received TPC command signal TPC_N.

Thus, each of Voyer's power control units 14_1-14_N modifies its corresponding input signal based on a TPC command signal received from a single mobile station. More simply, each of Voyer's power control units 14_1-14_N receives a TPC command signal from only one mobile station and, thus, can only regulate the power of its corresponding input signal based on this single TPC command signal; Voyer's power control units 14_1-14_N cannot regulate the power of the input signal based on TPC command signals received from multiple mobile stations. As a result, it necessarily follows that none of Voyer's power control units 14_1-14_N can decrease the transmit power of an input signal only when the TPC commands received from every mobile station instruct a decrease of the transmit power for this input signal.

Accordingly, Voyer does not disclose the claimed feature in which a base station decreases the transmit power of a downlink common channel when all of first TPC commands received from a

plurality of mobile stations instruct a decrease of the transmit power. Thus, Voyer does not anticipate the subject matter defined by claim 5. Independent claim 9 similarly recites the above-mentioned feature distinguishing method claim 5 from Voyer, but with respect to an apparatus. Therefore, reversal of the rejections applied to claims 5 and 9 is warranted.

Furthermore, for the reasons discussed in section VII(A)(1), Voyer also does not disclose the features recited in claims 5 and 9 of mobiles stations that: (1) each transmit first and second TPC commands and (2) each transmit the first and second TPC commands in the same channel.

Therefore, reversal of the rejections applied to claims 5 and 9 is warranted for these independent reasons.

3. Anticipation Rejections of Claims 6 and 10

Claim 6 defines a transmit power control (TPC) method for controlling the transmit power of a downlink common channel based on TPC commands received from a plurality of mobile stations. According to this method, a base station sets the transmit power of the downlink common channel to the greatest transmit power set, with or without an offset, for any one of a plurality of downlink dedicated channels.

The Final Rejection propose that Voyer discloses, in paragraphs 0005, 0012, 0014, and 0015, setting the transmit power of a downlink common channel to the greatest transmit power established, with or without an offset, for any one of a plurality of downlink dedicated channels (see Final Rejection page 7, penultimate paragraph).

By contrast to the proposed disclosure, however, Voyer discloses that: (1) the sum of the transmission powers for the signals constituting a composite signal must not exceed the desired operating transmission power (see Voyer paragraph [0012] and paragraph [0015], lines 8-11) and (2) the transmission power of a signal communicated to a nearby mobile station should be less than that of a signal communicated to a distant mobile station (see paragraph [0015], lines 10-15). Voyer further discloses that these two factors are considered when assigning transmission power to each signal constituting the composite signal (see paragraph [0017]).

Other than limiting the combined power of all signals constituting the composite signal, Voyer discloses no relationship between the transmit power assigned to a downlink common channel and that assigned to a downlink dedicated channel. Thus, Voyer cannot disclose the claimed feature of setting the transmit power of a downlink common channel to the greatest transmit power

established, with or without an offset, for any one of a plurality of downlink dedicated channels.

Accordingly, Voyer does not anticipate the subject matter defined by claim 6. Independent claim 10 similarly recites the above-mentioned feature distinguishing method claim 6 from Voyer, but with respect to an apparatus.

Therefore, reversal of the rejections applied to claims 6 and 10 is warranted.

4. Anticipation Rejections of Claims 8 and 11

Claim 8 defines a transmit power control (TPC) method for controlling the transmit power of a downlink common channel based on TPC commands received from a plurality of mobile stations. According to this method, each of a plurality of mobile stations transmits a TPC command for a downlink dedicated channel and a signal indicating an amount of increase of transmit power of the downlink common channel to a base station through an uplink dedicated channel or an uplink random access channel.

The Final Rejection proposes that Voyer discloses, in the abstract and paragraphs 0004 and 0007, mobile stations that transmit a TPC command and a signal indicating an amount of increase for the transmit power of a downlink common channel (see Final Rejection page 8, lines 5-10).

By contrast to the Final Rejection's proposal, however, Voyer discloses in the abstract that mobile stations each communicate a power command signal to a base station (see Voyer abstract, lines 5-8). Voyer discloses in paragraph 0004 that each mobile station SM_i communicates to the base station a command signal TPC_i that represents a request for increase or decrease of the transmission power for a signal (seemingly either a dedicated or a common channel) to be communicated by the base station to the mobile station (see paragraph [0004], lines 5-8). Voyer discloses nothing relating to the transmission of a signal by the mobile stations in paragraph 0007.

Although Voyer discloses that each mobile station communicates a power command signal TPC to the base station for use in regulating seemingly either a dedicated or a common channel, Voyer does not disclose that a mobile station communicates to a base station both a power command signal TPC for use in regulating the power of a dedicated and another signal for regulating the power of a common channel. Thus, contrary to the Final Rejection's proposal, it necessarily follows that Voyer cannot disclose: (1) a mobile station communicating both the power command signal TPC and the other power regulating signal in a single uplink channel and (2) simultaneously controlling both the power of a dedicated channel in accordance with the command signal TPC received from the

mobile station and the power of a common channel in accordance with another power command signal received from the same mobile station.

Accordingly, Voyer does not anticipate the subject matter defined by claim 8. More specifically, Voyer does not disclose the claimed features of: (1) a plurality of mobile stations that each transmit a TPC command for a downlink dedicated channel and a signal indicating an amount of increase of transmit power for a downlink common channel to a base station through an uplink dedicated channel or an uplink random access channel and (2) the base station controlling the transmit powers of the downlink dedicated channels based on the received TPC commands and increasing the transmit power of the downlink common channel by a received amount of increase of the transmit power. Independent claim 11 similarly recites the above-mentioned features distinguishing method claim 8 from Voyer, but with respect to an apparatus.

Therefore, reversal of the rejections applied to claims 8 and 11 is warranted.

B. Obviousness Rejections of Claims 2, 3, and 7

It is well-settled that, to establish a *prima facie* case of obviousness of a claimed invention, all of the claim limitations must be taught or suggested by the prior art. *See MPEP §2143.03,*

first sentence; In re Royka, 490 F.2d 981, 984-985, 180 USPQ 580, 583 (CCPA 1974). Here, the Final Rejection has alleged obviousness based on teaching, suggestion, or motivation to combine or modify the teachings of the prior art to produce the claimed invention; however, it is submitted that the Final Rejection has failed to establish obviousness based on teaching, suggestion, or motivation for the reasons given below. *In re Kahn, 441 F.3d 977, 986, 78 USPQ2d 1329, 1335 (Fed. Cir. 2006)* and see *MPEP §2143.01(I), first sentence of third paragraph*.

1. Obviousness Rejections of Claims 2 and 3

Claim 2 defines a transmit power control (TPC) method for controlling the transmit power of a downlink common channel based on TPC commands received from a plurality of mobile stations. According to this method, each mobile station communicates first TPC commands for a downlink common channel and second TPC commands for a downlink dedicated channel and the transmission interval between the first TPC commands is longer than the transmission interval between the second TPC commands.

The Final Rejection acknowledges that Voyer does not disclose having a mobile station communicate first TPC commands, used for power controlling a downlink common channel, and second TPC commands, used for power controlling a downlink dedicated channel,

such that the transmission interval of the first TPC commands is longer that of the second TPC commands (see Final Rejection page 10, second to last paragraph). To overcome this deficiency, the Final Rejection proposes that Nakano discloses one form of transmission power control having a longer interval than another form of transmission power control (see page 11, lines 3-6).

However, Nakano discloses that transmission power control commands used for site diversity operations are communicated at longer intervals than when such commands are used during non-site diversity operations (see Nakano Fig. 9 and specification col. 7, lines 13-23). Site diversity communication is a technique in which multiple base stations communicate the same payload information to a mobile station on different channels to increase the likelihood that the mobile station will correctly receive the payload information (see col. 1, lines 26-31). Site diversity operation is capable of satisfying a given communication quality using less transmission power, so that interference among base stations can be reduced and communication capacity can be increased (see col. 1, lines 31-35).

Thus, Nakano discloses increasing the frequency of transmission power control when receiving payload information from a single base station and decreasing the frequency of transmission power control when receiving the same payload information from

multiple base stations. Nakano discloses that it is necessary to decrease the frequency of transmission power control during site diversity operation because a central control station must coordinate the transmission power control for all of the base stations and extra transmission and processing time are required to communicate the transmission power control information among the mobile station, base station, exchange station, and control station (see Figs. 3 and 9, and col. 2, lines 52-58).

Nakano does not disclose a downlink common channel or distinguish such from a downlink dedicated channel. Thus, contrary to the Final Rejection's proposal, Nakano provides no motivation to modify Voyer's system to communicate power control commands more frequently for a dedicated channel than for a common channel, as recited in claim 2. At most, Nakano may provide motivation to modify Voyer's system to communicate power control commands more frequently for non-site diversity operation than for site diversity operation. However, diversity/non-diversity operations are not similar to dedicated/common channel operations.

The Final Rejection proposes that Nakano provides the motivation for modifying Voyer's system to achieve the claimed subject matter because of "the effect of the downlink transmission power control that can follow a variation in propagation loss and control frame error rate ... over a downlink common channel used to

simultaneously transmit [the] same data to a plurality of mobile stations" (see Final Rejection page 12, lines 4-10).

However, Nakano does not disclose a downlink common channel used to simultaneously transmit the same data to a plurality of mobile stations, as proposed in the Final Rejection. As a result, it necessarily follows that Nakano cannot disclose an "effect of downlink power control" that can follow a variation in propagation loss and control frame error rate in such a downlink common channel, as proposed in the Final Rejection.

Moreover, the Final Rejection does not identify how a transmission interval between first TPC commands that is longer than that between second TPC commands better or uniquely achieves the proposed benefit of "the effect of downlink power control that can follow a variation in propagation loss and control frame error rate." A skilled artisan finds motivation to modify a reference based on the teachings of another only when a benefit is foreseen by the modification. The Final Rejection fails to indicate: (1) why or how a longer interval for communicating first TPC commands than for communicating second TPC commands produces the putative effect of downlink power control that can follow a variation in propagation loss and control frame error rate or (2) why an equal or shorter relative interval would not produce this effect.

In accordance with the above discussion, the combined teachings of Voyer and Nakano provide no motivation to modify Nakano's system to achieve the claimed subject matter. Specifically, the references provide no motivation to modify Voyer's system such that each of a plurality of mobile stations communicates first TPC commands for a downlink common channel and second TPC commands for a downlink dedicated channel and the transmission interval between the first TPC commands is longer than the transmission interval between the second TPC commands. Therefore, Voyer and Nakano do not render obvious the subject matter defined by claim 2 and reversal of the rejection is warranted.

Independent claim 3 differs from claim 2 in that the communications of the first and second TPC commands are characterized by their numbers of occurrence within a frame rather than their interval. Whether the communications of the first and second TPC commands are characterized by their numbers of occurrence within a frame or their interval, the analysis provided above for distinguishing the claimed subject matter from the applied references continues to hold. Thus, for reasons similar to those discussed in connection with claim 2, Voyer and Nakano do not render obvious the subject matter defined by claim 3 and reversal of the rejection of claim 3 is warranted.

2. Obviousness Rejection of Claim 7

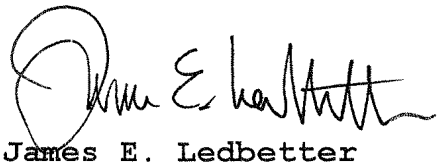
For the reasons discussed in section VII(A)(3) above, Voyer does not disclose the claimed subject matter whereby a base station sets the transmit power of a downlink common channel to the greatest transmit power set, with an offset, for any one of a plurality of downlink dedicated channels. Kumar does not disclose an offset of any kind. Thus, Kumar *per force* does not disclose decreasing an offset when an ACK signal is received a plurality of times consecutively and increasing the offset when a NACK signal is received a plurality of times consecutively, as proposed in the Final Rejection (see page 13, second to last paragraph).

Accordingly, the conclusions and arguments set forth in the Final Rejection are unfounded. Thus, Voyer and Kumar do not render obvious the subject matter defined by claim 7, and reversal of the rejection applied thereto is warranted.

Moreover, claim 7 depends from base claim 6 and reversal of the rejection applied to claim 6 is warranted for the reason discussed in section VII(A)(3). Because claim 7 recites all of the limitations of claim 6, claim 7 distinguishes over the prior art for the same reason as does claim 6. Therefore, reversal of the rejection applied to claim 7 is warranted for this independent reason.

In view of the law and facts stated herein, it is respectfully submitted that all pending claims define patentable subject matter. Therefore, reversal of all outstanding grounds of rejections is respectfully solicited.

Respectfully submitted,



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VIII. CLAIMS APPENDIX

2. A method for controlling transmit power carrying out a transmit power control over a downlink common channel used to simultaneously transmit same data to a plurality of mobile stations concurrently with a transmit power control over downlink dedicated channels assigned individually to said plurality of mobile stations, comprising the steps of:

each of said plurality of mobile stations each transmitting a first TPC command for the downlink common channel and a second TPC command for the downlink dedicated channel to a base station through an uplink dedicated channel; and

said base station controlling transmit power of the downlink common channel based on said first TPC commands and controlling transmit powers of the downlink dedicated channels based on said second TPC commands, wherein:

for each mobile station a transmission interval of said first TPC command is longer than a transmission interval of said second TPC command.

3. A method for controlling transmit power carrying out a transmit power control over a downlink common channel used to simultaneously transmit same data to a plurality of mobile stations

concurrently with a transmit power control over downlink dedicated channels assigned individually to said plurality of mobile stations, comprising the steps of:

each of said plurality of mobile stations each transmitting a first TPC command for the downlink common channel and a second TPC command for the downlink dedicated channel to a base station through an uplink dedicated channel; and

said base station controlling transmit power of the downlink common channel based on said first TPC commands and controlling transmit powers of the downlink dedicated channels based on said second TPC commands, wherein:

in one frame, the number of times said first TPC command is transmitted is smaller than the number of times said second TPC command is transmitted for each mobile station.

4. A method for controlling transmit power carrying out a transmit power control over a downlink common channel used to simultaneously transmit same data to a plurality of mobile stations concurrently with a transmit power control over downlink dedicated channels assigned individually to said plurality of mobile stations, comprising the steps of:

each of said plurality of mobile stations each transmitting a first TPC command for the downlink common channel and a second TPC

command for the downlink dedicated channel to a base station through an uplink dedicated channel; and

said base station controlling transmit power of the downlink common channel based on said first TPC commands and controlling transmit powers of the downlink dedicated channels based on said second TPC commands, wherein:

both said first TPC command and said second TPC command are transmitted in a same time slot for each mobile station.

5. A method for controlling transmit power carrying out a transmit power control over a downlink common channel used to simultaneously transmit same data to a plurality of mobile stations concurrently with a transmit power control over downlink dedicated channels assigned individually to said plurality of mobile stations, comprising the steps of:

each of said plurality of mobile stations each transmitting a first TPC command for the downlink common channel and a second TPC command for the downlink dedicated channel to a base station through an uplink dedicated channel; and

said base station controlling transmit power of the downlink common channel based on said first TPC commands and controlling transmit powers of the downlink dedicated channels based on said second TPC commands, wherein:

said base station increases a transmit power of the downlink common channel when at least one of the first TPC commands transmitted from said plurality of mobile stations is a TPC command instructing an increase of the transmit power and decreases the transmit power of the downlink common channel when all of said first TPC commands transmitted from said plurality of mobile stations are TPC commands instructing a decrease of the transmit power.

6. A method for controlling transmit power carrying out a transmit power control over a downlink common channel used to simultaneously transmit same data to a plurality of mobile stations concurrently with a transmit power control over downlink dedicated channels assigned individually to said plurality of mobile stations, comprising the steps of:

each of said plurality of mobile stations each transmitting a TPC command for the downlink dedicated channels to a base station through an uplink dedicated channel; and

said base station controlling transmit powers of the downlink dedicated channels based on said TPC commands and controlling a transmit power of the downlink common channel at a transmit power equal to a maximum transmit power in a plurality of transmission powers of the downlink dedicated channels after transmit power

control or at said maximum transmit power with an addition of an offset.

7. The method for controlling transmit power according to claim 6, wherein each of said plurality of mobile stations each transmit an ACK signal or a NACK signal for the downlink common channel to said base station through the uplink dedicated channel or an uplink random access channel, and

said base station decreases said offset when the ACK signal is received a plurality of times consecutively and increases said offset when the NACK signal is received a plurality of times consecutively.

8. A method for controlling transmit power carrying out transmit power control over a downlink common channel used to simultaneously transmit same data to a plurality of mobile stations concurrently with a transmit power control over downlink dedicated channels assigned individually to said plurality of mobile stations, comprising the steps of:

each of said plurality of mobile stations each transmitting a TPC command for a downlink dedicated channel and a signal indicating an amount of increase of a transmit power of the

downlink common channel to a base station through an uplink dedicated channel or an uplink random access channel; and

said base station controlling transmit powers of the downlink dedicated channels based on said TPC commands and increasing a transmit power of the downlink common channel by said amount of increase of the transmit power.

9. A base station apparatus carrying out a transmit power control over a downlink common channel used to simultaneously transmit same data to a plurality of mobile stations concurrently with a transmit power control over downlink dedicated channels assigned individually to said plurality of mobile stations, comprising:

a reception section that receives a first TPC command for the downlink common channel and a second TPC command for the downlink dedicated channel through an uplink dedicated channel from each of said plurality of mobile stations;

a first control section that controls a transmit power of the downlink common channel based on said first TPC commands; and

a second control section that controls transmit powers of the downlink dedicated channels based on said second TPC commands, wherein:

said first control section increases the transmit power of the downlink common channel when at least one of the first TPC commands transmitted from said plurality of mobile stations is a TPC command instructing an increase of the transmit power and decreases the transmit power of the downlink common channel when all of said first TPC commands transmitted from said plurality of mobile stations are TPC commands instructing a decrease of the transmit power.

10. A base station apparatus carrying out a transmit power control over a downlink common channel used to simultaneously transmit the same data to a plurality of mobile stations concurrently with a transmit power control over downlink dedicated channels assigned individually to said plurality of mobile stations, comprising:

a reception section that receives a TPC command for the downlink dedicated channel through an uplink dedicated channel from each of said plurality of mobile stations;

a first control section that controls transmit powers of the downlink dedicated channels based on said TPC commands; and

a second control section that controls a transmit power of the downlink common channel at a transmit power equal to a maximum transmit power in a plurality of transmit powers of the downlink

dedicated channels after transmit power control or at said maximum transmit power with an addition of an offset.

11. A base station apparatus carrying out a transmit power control over a downlink common channel used to simultaneously transmit same data to a plurality of mobile stations concurrently with a transmit power control over downlink dedicated channels assigned individually to said plurality of mobile stations, comprising:

a reception section that receives a TPC command for a downlink dedicated channel and a signal indicating an amount of increase of a transmit power of a downlink common channel through an uplink dedicated channel from each of said plurality of mobile stations;

a first control section that controls transmit powers of the downlink dedicated channels based on said TPC commands; and

a second control section that increases the transmit power of the downlink common channel by said amount of increase of the transmit power.

IX. EVIDENCE APPENDIX

There is no evidence submitted pursuant to 37 CFR §§1.130, 1.131, or 1.132 of this title or any other evidence entered by the examiner and relied upon by Appellants in the appeal.

X. RELATED PROCEEDINGS APPENDIX

There are no decisions rendered by a court or the Board in any proceeding identified pursuant to 37 CFR §41.37(c)(1)(ii).